Supplementary material for "Adjoint-aided homogenization for flows through heterogeneous membranes"

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1 Fourier coefficients for the randomly-perturbed geometry

The Fourier coefficients used in equation (4.1) to generate the geometries shown in figures 8*a* and 9 are given in table 1.

	Inclusion i																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
$\alpha_0^i \times 10^3$	-8.02	-6.36	-2.14	-5.53	-5.59	-4.22	-3.23	4.42	0.59	5.66	5.37	-7.07	-0.32	3.67	-1.28	1.89	-8.95	10.40	6.72	3.38
$\alpha_1^i \times 10^3$	-7.15	-2.71	-3.89	-7.71	-4.28	7.28	8.51	5.63	6.69	0.87	3.68	-0.18	8.93	-4.28	-6.82	3.83	-3.12	-2.05	8.85	-9.40
$\alpha_2^i \times 10^3$	-6.63	-11.19	1.62	6.21	-8.39	6.69	5.84	-2.10	6.93	-2.78	-9.30	-5.41	-8.21	7.87	5.66	-3.04	4.67	-0.90	2.18	-2.05
$\alpha_3^i \times 10^3$	-6.07	4.84	6.72	-6.24	7.42	8.15	1.77	2.11	2.19	3.22	6.51	6.98	-2.49	-2.64	9.37	2.63	5.83	1.86	8.58	3.67
$\alpha_4^i \times 10^3$	-3.65	-2.56	-2.10	-6.46	2.69	0.13	-8.05	1.36	-6.29	7.87	8.01	-7.07	9.68	-0.23	-5.75	6.80	0.89	-7.08	9.91	9.53
$\alpha_5^i \times 10^3$	-3.67	12.68	-1.96	3.19	7.57	3.14	11.40	0.54	-4.90	2.62	5.14	-8.03	9.45	5.97	6.08	-10.51	3.68	7.64	1.10	6.83
$\alpha_6^i \times 10^3$	-5.64	-2.57	-10.40	7.57	-5.89	10.43	-5.85	-4.05	-5.52	1.63	-8.67	1.01	4.84	14.50	-9.53	-9.10	7.78	0.12	5.10	-0.34
$\gamma_1^i \times 10^3$	-5.75	9.75	12.08	3.45	4.41	11.50	-7.96	-8.45	-1.55	-4.57	3.28	0.18	3.32	-4.39	0.10	-5.06	4.38	8.84	-2.85	-2.44
$\gamma_2^i \times 10^3$	-8.44	-3.92	-1.17	-8.90	-4.75	-6.38	-11.34	0.64	8.41	14.80	-0.43	7.16	7.54	4.99	-0.27	-5.29	7.47	8.60	9.77	-0.99
$\gamma_3^i \times 10^3$	8.27	4.87	-7.19	5.94	-7.63	3.53	5.56	-7.43	7.74	-4.82	2.35	2.27	-2.30	-6.70	9.92	-3.68	1.63	5.17	7.36	-5.56
$\gamma_4^i \times 10^3$	4.13	-5.41	7.31	4.77	4.68	2.43	-3.80	5.43	3.07	12.14	-5.00	-7.02	5.66	-8.27	-3.86	-7.60	-8.49	-11.24	7.80	6.25
$\gamma_5^i \times 10^3$	1.15	0.80	7.19	-7.29	3.00	-2.61	4.00	8.80	8.48	-1.42	-6.12	-1.92	7.59	6.48	-1.33	-3.32	8.36	-14.68	-2.85	8.41
$\gamma_6^i \times 10^3$	-3.73	8.73	6.67	0.48	3.77	-8.28	-2.89	-7.79	4.63	-2.72	6.25	-7.85	-4.02	3.82	12.19	-8.27	5.94	1.84	2.08	9.09

Table 1: Fourier coefficients used in (4.1). The inclusion index i has the same meaning in figure 9 and equations (4.1,4.2).